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**Understanding the dynamics of Nigeria's urban transition:  
A refutation of the 'stalled urbanization' hypothesis**

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**Abstract**

Nigeria contains some of Africa's oldest and newest cities, hosts five of the 30 largest urban settlements on the continent, and is estimated to have the biggest urban population on the continent. Yet many of the basic 'facts' about spatial-demographic trends in Nigeria have been contested. Most recently, an article published in *World Development* in 2012 claimed that urbanization had stalled in Nigeria. In an effort to establish and explain the stylized facts of Nigeria's urban transition we analyze demographic and spatial trends drawing on diverse sources, including censuses, household surveys, remotely sensed data, and migration studies conducted over the past three decades. The evidence does not support the claim of stalled urbanization: Nigeria's urban population is growing rapidly in absolute terms and will continue to increase as a share of the national population due both to rural-urban migration and rural transformation. These drivers of urbanization are a product of persistently high fertility in a context of declining mortality in both rural and urban areas. Robust economic growth over the past decade likely accelerated urbanization, but even as the economy slows demographic fundamentals will continue to drive rapid urban growth and urbanization.

**Keywords:** Africa; Nigeria, urbanization, urban growth, urban expansion

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## **Introduction**

Nigeria contains some of Africa's oldest and newest cities (e.g. Kano and Abuja), hosts five of the continent's 30 largest cities, and is estimated to have the biggest urban population on the continent (UN 2014). According to UN figures just under 50 percent of Nigeria's population now live in urban areas and this proportion is projected to reach 67 percent by 2050 (ibid). Nigeria has emerged as Africa's urban giant.

Yet many of the basic 'facts' about spatial-demographic trends in Nigeria have been contested, and population statistics have been highly politicized in the country since independence. Most recently, an article published in *World Development* asserted that "There can be no doubt...that the level [of urbanization in Nigeria] has been overestimated" (Potts 2012, 1386) and that the evidence "is overwhelmingly in favour of the interpretation that urbanization in Nigeria has slowed dramatically" (ibid, 1388). More boldly, it was claimed that "it is surely now undeniable that...the shift from rural to urban in this part of the world has usually become very gradual or stagnant or, in some cases, reversed" (ibid, 1386).

These claims have very significant implications for how policymakers frame development challenges and choose to allocate resources. It is therefore important to interrogate their validity.

In this paper we investigate the evidence and sketch out the stylized facts of urban transformation in Nigeria by drawing on diverse sources, including censuses, household surveys, remotely sensed data, and migration studies conducted over the past three decades.

We find that recent suggestions of stalled urbanization in the country are not supported by the evidence presented here. Nigeria's urban population is growing rapidly in absolute terms and will continue to increase as a share of the national population due both to rural-urban migration and rural transformation. Both of these drivers of urbanization are a product of persistently high fertility in a context of declining mortality in rural and urban areas. Robust economic growth over the past decade likely accelerated urbanization, but even as the economy slows demographic fundamentals will continue to drive urbanization.

The claim that urbanization has stalled is not only empirically incorrect, it is based on problematic conceptualisation of urbanization as an intrinsically economic process. While economic change and urban change are often intertwined, demographic forces rather than economic ones have likely played a more significant role in shaping Africa's urban transition over the past three decades. Population growth in urban areas has been fast and rural population growth generates more potential migrants. Some move seeking employment opportunities, but according to the data many do not. Moreover, the scale of rural transformation in Nigeria has likely been underappreciated as a source of urbanization and urban growth.

The paper is organised as follows. In the next section we review key definitions and measurement issues associated with understanding spatial-demographic trends in general, and then highlight the particularly politicised nature of population data in Nigeria. The subsequent two sections present the stylized facts around trends in urbanization, urban growth, urban expansion and the evolution of Nigeria's urban system since independence. This is followed by an analysis of drivers, including demographic change and migration, and some tentative predictions for the short to medium term.

## 1. Definitions, measurement and data politics

The word ‘urbanization’ is often used as a catch-all term for three related but distinct processes: urbanization, urban growth and urban expansion (Fox and Goodfellow 2016; Fox and Bell 2016). Conflating these processes is analytically problematic and can lead to confusion about what is actually happening, and, by extension, what appropriate policy responses might be (ibid; see also Fox 2014).

The term ‘urbanization’ is used here to refer specifically to an increase in the *proportion of a country or region’s population residing in urban settlements*, while ‘urban growth’ refers to an increase in the *absolute size of a country or region’s urban population*. These terms are frequently used interchangeably in both academic and policy circles, but it is particularly important to recognize the difference between them in the context of sub-Saharan Africa (SSA) where urban population growth rates are generally high but overall urbanization rates have often been relatively low (Fox 2012; Potts 2012). This has important policy implications which will be discussed below.

We use the term ‘urban expansion’ to indicate the spatial or physical enlargement of built-up areas. This generally accompanies urban growth, but the dynamics of urban expansion also depend upon the nature of physical developments and the population densities they promote. It is possible, for example, for a city to experience urban growth without expansion if this growth is absorbed within existing settlement boundaries, resulting in higher population density. Conversely, expansion can occur without growth where new developments are created to facilitate lower population densities for an existing community.

To complicate matters there is no consensus on what constitutes an ‘urban’ area as opposed to a rural settlement. Broadly speaking, urban settlements are defined as demographically

large, relatively densely populated, built-up areas (Fox and Goodfellow 2016). In practice, countries classify settlements for enumeration purposes using a variety of criteria—there is no universal standard. Considerations include population size, density, administrative status and employment composition, amongst others; this complicates direct comparisons between countries (Satterthwaite 2007). In Nigeria a settlement is classified as urban if it contains 20,000 people or more, which is a relatively high minimum population threshold compared to many other countries. Some of the data we use below is based on this threshold; other sources use alternative criteria. We note the differences in the underlying definition of ‘urban’ where significant.

With regard to monitoring urban change processes there are essentially three fundamental sources of quantitative data on urban population and urban settlement characteristics: population censuses, household surveys, and remotely sensed data (e.g. aerial photography). All credible published estimates and projections can generally be traced back to one or more of these sources.

Census data has historically been considered to be the ‘gold standard’ of demographic sources. In principle, census exercises provide a relatively fine-grained statistical portrait of the socio-economic and demographic characteristics of a population on a periodic basis, usually every 10 years. This facilitates effective public policy planning and implementation. In practice, censuses in Africa vary considerably in frequency, coverage and quality.

Census data are also a key source underpinning the widely used United Nations demographic statistics. Where census data are limited or unavailable, other data are employed to inform models which are used to interpolate figures for incomplete series and project population counts into the future. For example, in sub-Saharan Africa many published estimates are based on a combination of available census data and data from

sample surveys conducted by independent agencies which contain information useful for modelling population dynamics (such as fertility and mortality rates).

In the case of Nigeria, the most recent urban population estimates from the UN (published in 2014) have been derived from the 1963, 1991 and 2006 censuses, as well as a variety of household surveys including the Demographic Health Survey (DHS) and the Multiple Indicator Cluster Survey (MICS) (UN 2014). According to the UN methodology, and following the convention in Nigeria, settlements with a population of 20,000 or more are classified as urban. All state capitals are included.

Critics of the UN data point out that the published data series appear misleadingly complete and apparently comparable when in fact the quality of the data underpinning them varies wildly and national statistics agencies use very different definitions when classifying populations as 'rural' or 'urban' (Cohen 2004; Satterthwaite 2007). Nevertheless, UN statistics represent the best efforts of professional demographers to estimate and project national and sub-national population trends with available data and are certainly useful in identifying trends over time—particularly within individual countries.

While UN figures are useful at the macro (i.e. national) level, margins of error increase significantly when it comes to estimates of individual settlements, where urban boundary definitions and the quality of underlying census data make a significant difference.

For example, according to the latest UN figures the population of Lagos State was roughly 8.86 million in 2005 (UN 2014). This is close to the estimate provided by the federal government's National Population Commission (NPC) census estimate of 9.1 million in 2006. However, the Lagos State Government claimed there were 17.5 million people living

in the state in 2006, based upon an independently conducted parallel census in that year and corroborated by a mass immunization programme.

However, the boundaries of the state of Lagos do not neatly correspond to the built up area of the city. Thomas Brinkhoff of citypopulation.de therefore provides an alternative estimate for metropolitan Lagos using the Lagos State Bureaus of Statistics population data with the city boundaries defined by the 16 contiguous Local Government Areas (LGAs) that contain the built-up area of the city. (LGAs are the smallest geographically-defined tiers of administration in Nigeria.) This approach yields a population estimate of roughly 16 million in 2006. Yet this estimate does not include large areas of the city that are clearly part of the continuous built up area of the city but happen to fall inside neighboring Ogun State.

There is now a fourth estimate that does factor these areas in from the Africapolis project, which estimates the population of greater Lagos to be 10.6 million in 2010. Yet even this estimate excludes areas that are technically separate but are arguably part of the functional area of metropolitan Lagos, such as Ikorodu in the east and Magbon in the west. In short, the 'true' size of Lagos remains contested due to disputes about the integrity of survey estimates and a lack of consensus on how to appropriately define the boundaries of the city.

However, the Africapolis estimates are a step in the right direction and reflect the emergence of a new resource for monitoring urban change: geospatial datasets which integrate various types of remotely sensed data (e.g. aerial photography and satellite imagery) with census data and novel modeling techniques. Proponents claim that remotely sensed data can be used to derive estimates of the size of built-up areas that is based on a "more precise, consistent and comparable definition of an urban area than notions such as population thresholds or administrative boundaries" (Linard, Tatem and Gilbert 2013, 23).



The most notable examples include the Global Rural-Urban Mapping Project (GRUMP), the Atlas of Urban Expansion (Angel 2012), the WorldPop project and Africapolis itself.

These datasets are particularly useful for monitoring urban expansion by providing information on land cover changes gleaned from satellite images. For example, the GRUMP dataset draws on composite images of night-time lights on cloudless nights taken by US Defense Department meteorological satellites; WorldPop employs land cover data from the European Space Agency's GlobCover project; and Africapolis relies primarily on Google Earth images supplemented with those available from the US Geological Survey. In each case, the visual information from satellites has been processed to distinguish between built-up (i.e. urban) areas and natural landscapes, resulting in an estimate of the land area covered by human settlements.

The datasets can also be used to cross-validate population estimates where habitation densities can be accurately calculated. However, it is important to note that population estimates drawn from geospatial datasets are ultimately informed by census data. While land cover data can help to refine estimates of urban population size (e.g. reveal gross discrepancies between reported and actual habitation densities), they should not be interpreted as wholly independent sources of population data given that they rely on census data and projections for population counts. Without this, remotely sensed data alone can be misleading. For example, night-time lights data can significantly underestimate population size and density in areas lacking energy infrastructure.

In sum, there are a variety of sources we can draw upon to assess patterns of urban change, but there are inherent difficulties in sub-Saharan Africa due to the paucity of reliable census data and the current limitations of remotely sensed data. In Nigeria, a patchy record of data collection has been compounded by politically motivated manipulation of population

statistics. The politics of population data in Nigeria is directly linked to the way in which these data are used to determine the allocation of fiscal resources in the country, and the tenuous political settlement that binds together an ethnically and religiously diverse society (Robinson 2012; Potts 2012). These factors provide strong incentives for local officials to inflate the apparent size of their communities at state level, by ethnic group and even by religion (Population Council 2007; Potts 2012).

As a result of the propensity for over-counting in the country, the quality of census data is not considered to be very good. The first post-independence census in 1963 is widely considered to be a product of political negotiation between states rather than an accurate count; the results of a subsequent census in 1973 were suppressed (ibid). The next census held in 1991 is generally believed to be credible as is the most recent in 2006; both excluded questions about ethnicity and religion (see Population Council 2007; Moriconi-Ebrard, Harre and Heinrigs 2016). However, since all states have an incentive to inflate estimates it is believed that national population figures are inflated (ibid). Nevertheless, this lack of precision does not necessarily preclude identifying broad trends over time.

## **2. Some stylized facts about Nigeria's urban transformation**

One way of compensating for questionable census statistics is to combine information from multiple sources. This approach increases confidence in the broad stylized facts concerning the dynamics of Nigeria's urban transition.

### **2.1 Urban growth and urbanization**

Even with a wide margin of error in census figures, there is no doubt that Nigeria's urban population has expanded rapidly over the past 50 years and will continue to grow relatively fast in the coming decades, although *how* fast is a matter of some dispute. Table 1

summarizes urban population trends from three data sources: available censuses (1952, 1963, 1991), the United Nations (which incorporates data from the 2006 census) and Africapolis, which combines census data with geospatial analysis.

All three sources show a 10-fold increase in the size of Nigeria's urban population between 1950 and 1990 (from around 3 million to just over 30 million). The 2006 census estimate of the nation's urban population is not publicly available, but the UN and Africapolis figures (both of which cite the 2006 census) suggest that the urban population reached about 50 million by the year 2000 and 77 million in 2010.

**Table 1. Urbanization and Urban Growth in Nigeria, 1950-2010**

	1950	1960	1970	1980	1990	2000	2010
<i>Urban population (millions)</i>							
UN	3.88	7.42	13.02	21.59	34.42	52.38	77.63
Africapolis	3.62	8.40	12.44	20.22	32.73	48.41	76.42
Census*	3.10	8.97			32.29		
<i>Level of urbanization (%)</i>							
UN	10.2	16.2	22.7	28.6	35.3	42.4	49.0
Africapolis	9.6	18.6	22.2	27.4	34.2	39.4	47.9
Census*	10.2	16.1			36.3		

Notes: \*Census estimates are from the years 1952, 1963 and 1991 respectively.

Similarly, all three sources indicate that the level of urbanization in Nigeria—i.e. the percentage of the total population residing in urban settlements—grew from roughly 10 percent in 1950 to 35 percent in 1990. The UN and final Africapolis estimates for 2010 agree on a rate of between 48 and 49 percent (see Table 1).

It is important to highlight the similarity of these figures from diverse sources because differences between them have been used in the past to argue that the level of urbanization

in Nigeria has been overestimated (see Potts 2012). However, large differences between draft estimates by Africapolis (2008) and UN figures have largely been eliminated in the most recent Africapolis estimates (Moriconi-Ebrard, Harre and Heinrigs 2016). These revised estimates were informed by more data, improved satellite imagery and the identification of previously overlooked yet very large urban centers (e.g. Onitsha).

The current estimates therefore clearly contradict the assessment that urbanization has ‘stalled’ in Nigeria, as suggested by Potts (2012), whose analysis placed heavy emphasis on the economic dimensions of urbanization and downplayed the non-economic forces that can serve to drive the process forward even in the face of economic crisis (see Fox 2012).

Nevertheless, the new Africapolis data do indicate that rates of urban population growth and urbanization have fluctuated considerably over the past 70 years, and this variability may very well reflect economic (and political) trends. Table 2 compares urban growth and urbanization rates calculated from UN and Africapolis data. The UN data shows very high but steadily declining rates of urban growth between 1950 and 2010, while the Africapolis data suggest more volatility, with extremely rapid growth in the 1950s, and high growth after with noticeable slowdowns in the 1960s and 1990s. These same trends are evident in rates of urbanization across the decades as well.

**Table 2. Average annual growth rates of urban population & urbanization in Nigeria**

	1950- 1960	1960- 1970	1970- 1980	1980- 1990	1990- 2000	2000- 2010
<i>Urban population growth rate</i>						
UN	6.52	5.62	5.06	4.66	4.20	3.93
Africapolis	8.41	3.92	4.86	4.81	3.91	4.57
<i>Urbanization rate</i>						
UN	4.63	3.37	2.31	2.10	1.83	1.45
Africapolis	6.61	1.77	2.10	2.22	1.42	1.95

The Africapolis data also include useful estimates of population change for individual settlements within Nigeria between 1950 and 2010. A simple tabulation of changes in the number of settlements by size class reveals the extent to which rural transformation has contributed to urban growth and urbanization in the country—a dynamic that is often overlooked and impossible to identify from data aggregated at national level. As Table 3 shows, the number of settlements in Nigeria with a population of 5,000 or more has grown from 174 in 1950 to 1197 in 2010. If we use the population threshold definition for an urban settlement employed by the Nigerian government (20,000), the number has grown over 10-fold, from 50 to 536.

**Table 3. Number of urban settlements in Nigeria by size class, 1960-2010**

	<i>20,000+</i>	<i>10,000- 20,000</i>	<i>5,000- 10,000</i>	<i>Total</i>
<b>1950</b>	50	49	75	174
<b>1970</b>	135	175	82	392
<b>1990</b>	280	304	462	1046
<b>2010</b>	536	484	177	1197

*Source:* Africapolis (2015)

In sum, data from multiple sources indicate that Nigeria’s urban population has grown rapidly in both absolute and relative terms over the past 75 years, and there is no indication that this growth will cease in the near future. Indeed, after a slowdown in the 1990s, rates of urban growth and urbanization accelerated between 2000 and 2010. A potential explanation for this is provided in our analysis of drivers below.

## 2.2 Urban expansion and the evolution of the urban system

The growth of Nigeria's urban population in both absolute and relative terms has naturally been accompanied by the expansion of existing built-up areas and, as noted above, the emergence of new identifiably 'urban' settlements. Overall, the physical expansion of built-up areas is expected to continue in the coming decades, although there is considerable uncertainty about how much expansion will take place. The key variables are population growth and, critically, population density.

As Table 4 shows, an estimated 464,192 hectares of land was covered by large urban settlements in 2000. Assuming that urban population densities remain constant, urban land cover is expected to triple by 2030; assuming a 2% decline in urban population density as urban population grows, urban land cover is forecasted to grow five-fold, reaching roughly 2.3 million hectares. It is impossible to predict how population densities will change, but in general rates of urban expansion have exceeded rates of urban population growth in West Africa (Angel 2012). If this precedent holds, it is likely that population densities will decline somewhat resulting in greater physical expansion, although there are reasons to expect significant differences in patterns of densification between northern and southern regions (see below).

**Table 4. Urban land cover estimates and projections**

Urban land cover in 2000 (hectares)	Assumed annual density decline (%)	Projected urban land cover in 2030 (hectares)	Percentage change, 2000-2030
464,192	0	1,262,215	172
	1	1,703,812	267
	2	2,299,905	395

*Source:* Angel (2012)

The broad contours of expansion trends and the evolution of Nigeria's urban system are illustrated in Figure 1, which uses the WorldPop dataset (which combines imagery and population density data) to map population density at a resolution of 1km<sup>2</sup>. Population density is mapped according to a 3-tiered classification: 0-150 people per km<sup>2</sup> (p/km<sup>2</sup>), 151-300 p/km<sup>2</sup> and 301+ p/km<sup>2</sup>. These thresholds were chosen based on precedents set by the World Bank and Eurostat: the former employ a minimum population density of 150 p/km<sup>2</sup> for their Agglomeration Index (Uchida 2010) while Eurostat uses a minimum density threshold of 300 p/km<sup>2</sup> to classify an urban area (Eurostat n.d.).

The map, which is consistent with similar analyses of data from Bloch et al (2015) indicates that the most extensive urban expansion has been concentrated around four urban 'fields'—i.e. regions characterized by one or more metropolitan centers connected to secondary cities and towns interspersed with rural settlements (Friedmann and Miller 1965). These include a Northern field centered around Kano and encompassing Kaduna in the south and Katsina in the North; an emergent Central field running from Abuja in the south-west to Jos in the north-east; a Southwestern field stretching from Lagos in the south to Ilorin in the north; and a Southeastern field within a roughly square zone encompassing Benin City, Port Harcourt, Calabar and Enugu.

Of these, the Northern conurbation around Kano is forecast to experience the most rapid physical expansion in coming decades and ranks among the top five most rapidly expanding settled regions in all of Africa (Seto, Güneralp and Hutya 2012). Similar maps derived from alternative data sources for the years 1990, 2000 and 2006 confirm the overall pattern of four major urban fields in Nigeria (see Bloch et al 2015).

Apart from illustrating the geography of major urban fields in Nigeria, the map also show that the country has a fairly balanced 'urban system'—i.e. the distribution of population

across urban settlements. A country is considered to have a highly 'concentrated' or 'primate' urban system when a large, single city dominates (i.e., it is significantly more than twice the size of the second largest city in the territory).

**Figure 1. People per square kilometre in 2014 & emergent urban fields**

While there is a widely held perception that Lagos is an over-bearing mega-city within the urban system, Nigeria's urban population is in fact spread fairly evenly across these four large conurbations. Indeed, in contrast to many African countries Nigeria has historically exhibited a relatively 'balanced' urban system. In 1952 the country's settlement distribution was very even, with Ibadan holding the position of largest city. By 1991, Lagos had emerged as the largest settlement but the rank-size distribution of settlements remained even; by 2006 Kano surpassed Ibadan to become the largest city after Lagos (see Bloch et al 2015). Similarly, according to Africapolis estimates shown in Table 5, Nigeria had the second lowest level of urban primacy in West Africa in 2010. Although this simple measure does not reflect the structure of the urban system more broadly, it does suggest that Lagos is not necessarily an overbearing giant in Nigeria's urban system.

If the upper-bound estimates of metropolitan Lagos are used instead of the more conservative ones published by the UN, NPC and Africapolis (see above), then Nigeria's primacy score would increase somewhat (up to perhaps 3.5 depending on the exact figures used), but it would still exhibit one of the least concentrated urban systems in West Africa.

Moreover, Lagos appears to be growing more slowly than other large and medium-sized cities in the country, which is likely to mitigate the city's demographic dominance in coming decades. Calculations based on UN population estimates suggest that population growth in large second tier cities such as Abuja, Benin City and Port Harcourt will outpace that of



Lagos between 2010 and 2020, while Kano and Ibadan are likely to roughly match the growth of the commercial capital. In sum, Nigeria's urban landscape is changing fast, but the urban system has been and will likely remain relatively balanced in comparative terms.

**Table 5. Urban primacy scores for West African countries**

	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>
Liberia	7.1	10.2	14.8	21.8	25.7
Togo	7.1	8.9	10.3	9.5	11
Mali	5.6	6.8	8.1	8.2	9.4
Guinea	7.3	9.7	10.2	9.8	8.5
Mauritania	1.6	6.3	6.8	7.7	8.5
Guinea-Bissau	-	8.4	10.9	15.6	7.5
The Gambia	-	2	4.8	7	7.2
Chad	4	5.1	5.3	6	7
Cote d'Ivoire	4.7	5.6	5.9	6.4	6.7
Niger	2.7	3.7	3.4	4	5.6
Sierra Leone	5.5	4.6	6.3	6.2	5.5
Senegal	6.2	7.2	8.7	5.9	3.7
Burkina Faso	1.5	1.7	2.1	2.6	3.4
Benin	1.8	2.2	2.2	2.7	2.4
Cabo Verde	1.3	1	1.3	1.5	1.9
<b>Nigeria</b>	<b>1.9</b>	<b>2.4</b>	<b>3</b>	<b>3.5</b>	<b>1.7</b>
Ghana	1.8	1.9	1.7	1.7	1.6

*Source:* Africapolis/e-Geopolis, SWAC/OECD (2016). Primacy score = population of largest city divided by the population of the second largest city.

### **3. Analysis of drivers**

Accounting for these trends and patterns requires an appreciation of economic, demographic and social underpinnings of population growth and mobility at national and subnational levels. Past research has largely been framed within the dual economy model of urbanization first formulated by Lewis (1954) and has mostly ignored critical demographic and social factors that influence urban change processes. As a result, much of this analysis has failed to adequately explain observed trends (e.g. Fay and Opal 2000; see Lall, Selod and Shalizi 2006 and Fox 2012). In the case of Nigeria, a narrow focus on the economic dimension of urbanization partly accounts for the spurious conclusion that urbanization has stalled in the country.

### 3.1 The demographic foundations of urban growth and expansion

The underlying cause of rapid urban growth and expansion in Nigeria is rapid population growth driven by declining mortality and persistently high fertility. This is illustrated in Table 6, which summarises fertility and child mortality rates over five rounds of Demographic and Health Surveys in the country between 1990 and 2013. Although it is not possible to derive direct estimates of population growth from these series as the indicators are not strictly comparable, an analysis of overall trends between 1990 and 2013 clearly shows that mortality decline has outpaced fertility decline by a wide margin.

**Table 6. Fertility and child mortality trends in Nigeria, 1990-2013**

	1990	1999	2003	2008	2013	% Δ 1990-2013
Total Fertility Rate	6.0	4.7	5.7	5.7	5.5	-8.3
Under-5 mortality rate	191	133	217	171	144	-24.6

*Source:* Demographic and Health Surveys, ICF International

The resultant population boom has driven urban growth and expansion directly through (a) natural population increase in existing urban centers, and (b) densification in rural areas resulting in the reclassification of settlements from rural to urban. Indirectly, rapid population growth in rural areas expands the pool of potential urban migrants and may, through demographic pressure on natural resources, contribute to the ‘push’ factors that can stimulate rural out-migration (Fox 2012). While rural-urban migration contributes to urban growth (see below), the significance of urban natural increase and reclassification due to rural densification have been widely underappreciated while the role of rural-urban migration has likely been overstated in Nigeria, and indeed in sub-Saharan Africa more generally (de Brauw, Mueller and Lee 2014; Jedwab, Christaensen and Gindelsky 2014; Fox 2017).

Fertility rates (and hence population growth rates) have historically tended to be lower in urban areas than rural areas (McNicoll 2011). However, in many developing countries in the post-war era urban fertility rates have remained relatively high while mortality rates have fallen creating an 'urban push' – i.e. a rapid, internally generated increase in urban population size (Jedwab, Christiaensen and Gindelsky 2014). As a result, urban growth in many developing countries has been driven more by urban natural increase than rural-urban migration (ibid; see also Fox 2012).

Although there is insufficient data to accurately determine the relative contributions of natural increase, reclassification and migration to urban growth and expansion in Nigeria, data on fertility and mortality trends in rural and urban areas is consistent with the hypothesis that urban natural increase plays a significant (and possibly dominant) role in driving urban growth.

Figure 2 shows trends in fertility and child mortality rates broken down by rural and urban residence between 1990 and 2013 drawing on DHS data. All indicators have been converted to index numbers to facilitate comparison of trend rates. In all areas, fertility and mortality declined between 1990 and 1999, increased sharply between 1999 and 2003 (for reasons that are not entirely clear) and have subsequently fallen. However, child mortality has fallen much faster than fertility since 2003. In urban areas, the average fertility rate of 4.7 is high and remained unchanged between 2008 and 2013. In other words, urban fertility decline appears to have stalled in Nigeria, somewhat contrary even to recent predictions (see McNicoll 2011), while urban mortality rates have plummeted. On current trends, urban natural increase can thus be expected to accelerate and contribute significantly to urban population growth and urban expansion in the near future.

**Figure 2. Trends in fertility and mortality by urban and rural residence**

The trends evident in this figure also provide a possible explanation for those seen in the Africapolis data summarized in Table 2 above, which showed an acute deceleration of urbanization and urban growth in the 1990s and then an uptick in the first decade of the new millennium. In the former period, fertility was falling rapidly, while in the later it rose again.

Just as the role of urban natural increase has often been overlooked in analyses of urban transitions, so too has the significance of rural transformation (Fox 2017). The process of urbanization is generally conceptualised, and seen in the public imagination, as one in which people migrate from rural areas into existing towns and cities in search of opportunity. What is often overlooked is the enormous increase in the number of identifiably urban settlements that have emerged in previously rural landscapes in developing regions in recent decades, including in sub-Saharan Africa. As shown in Table 3 above, the number of settlements with a population of 5,000 or more in Nigeria increased nearly 10-fold. The smaller of these—the ‘emergent’ towns and cities—generally have lower building and population densities than older, established urban settlements with accumulated trunk infrastructure and therefore may contribute significantly to urban expansion, alongside the enlargement of existing urban boundaries.

### 3.2 Migration and urbanization

While rural-urban migration is probably not the main contributor to overall urban population growth in Nigeria, it nevertheless plays an important role in urban change processes, particularly with regard to urbanization – i.e. an increase in proportion of the national population residing in urban areas. When viewed over the long run, the net transfer of people from rural to urban settlements has been a key driver urbanization. Due to a lack of reliable, time-series data we do not have a clear picture of the extent and patterns of rural-

urban migration within Nigeria. However, by piecing together the available information and combining it with what is generally known about migration in the region, we can identify some broad trends and dynamics, and dispel some myths.

First, it should be noted that there are four discernible types of migration flows in Nigeria: rural-rural, rural-urban, urban-rural and urban-urban (Oyeniyi 2013). According to data from the 1993 Migration and Urbanization Survey of Nigeria, rural-rural migration at the time accounted for 63 percent of migrant flows in the country while rural-urban migration accounted for just 37 percent (Mberu 2005). However, data from the National Population Commission's 2010 Internal Migration Survey (IMS) indicate an inverse pattern, with rural-urban migrants now constituting 60 percent of all flows and rural-rural migrants making up 40 percent. A separate World Bank study found that rural-urban migration accounts for 83 percent of migrant flows (McKay and Deshingkar 2014, 12). The reasons for this shift have not been explored, but may relate to both demographic and economic trends, which have a significant influence on migration volume (Fox 2012; Mberu 2005). As Figure 3 shows, Nigeria was in the midst of a protracted economic downturn in the early 1990s, and population growth was slowing; around the turn of the millennium both trends were reversed, with both population growth and economic growth picking up pace.

**Figure 3. GDP per capita and rate of natural population increase, 1980-2013**

The NPC migration survey data also show wide variation in patterns of migrant flows across states in Nigeria, with the highest rates of rural-urban flows reported in states within the South-western, South-eastern and Central conurbation zones as identified above. Rural-rural migration is reported as the dominant flow in 12 of Nigeria's 36 states.

Unfortunately, there is insufficient data available to determine the absolute volume of migrant flows, the distribution of flows across state boundaries, and the volume of urban-rural and urban-urban flows, both of which are important in shaping urban growth, expansion and population distribution. For example, urban-rural flows can offset rural-urban ones and have done so in many African countries in the past (Mberu 2005; Potts 2012). Similarly, urban-urban flows can significantly influence urban systems change. Indeed, when it comes to understanding growth and expansion trends at the individual settlement level, urban-urban migration may in some cases play a dominant role. The growth of Abuja (and hence its ascendance in Nigeria's urban hierarchy) is a case in point: the city has grown rapidly primarily due to intensive in-migration after the relocation of the capital, with many (if not most) migrants likely to have arrived from other Nigerian towns and cities rather than the surrounding countryside.

According to data from the Nigerian 2010 IMS cited by Oyeniyi (2013), the most common reasons for men to migrate are to seek employment (24.1 percent) and to further education (15.7 percent), while for women the most commonly cited reasons were to join a spouse or marry (39.8 percent), to further education (10.9 percent) and to seek employment (10.6 percent). Other reasons included joining relatives, work transfers, apprenticeships, 'adventure' and escape from conflict (Oyeniyi 2013). Although these figures relate to all migrants surveyed (not just those who moved from rural to urban areas), they are generally consistent with the extensive research on the determinants of rural-urban migration (Byerlee 1974; Todaro 1980; Lucas 1997; de Brauw, Mueller and Lee 2014). In sum, people move voluntarily in search of (perceived or actual) opportunity or to escape an undesirable situation. It is notable, however, that the evidence suggests that the search for employment, which is assumed to be the key determinant of migration in neoclassical economic models, accounts for a small fraction of stated motivations for migration for both men and women in Nigeria.

Moreover, there is some evidence that the wage gap between rural and urban areas, which economists often rely upon to estimate the likelihood of rural-urban migration, is not particularly wide in Nigeria. Data from 2003 indicate that the urban-rural wage ratio in Nigeria was 1.36 in the formal sector and 1.49 in the informal sector (de Brauw, Mueller and Lee 2014, Table 1). This is not particularly high by regional standards for SSA and may help to account for apparently modest overall migrant flows between rural and urban areas in the country. By comparison, the same data set indicates that the urban-rural wage ratio in the informal sector is over 2 in Ethiopia, Kenya, Togo and Uganda and over 3 in Zambia.

There is also some information on *who* is most likely to migrate voluntarily from extensive research on rural-urban migration propensities in developing countries: young people who are relatively well-educated, often with social connections in the target destination (Mendola 2012). Research on the characteristics of migrants in Nigeria specifically have been consistent with these broader findings in the empirical literature (Mberu 2005). Education level, in particular, is highly correlated with the propensity to migrate from rural to urban areas in Nigeria (ibid).

It also appears that the gender balance of the migrant population has equilibrated: historically men have been significantly more likely than women to migrate, but data from both the 2010 IMS and 1993 Migration and Urbanization Survey show no significant difference in migration propensities between men and women (Oyeniyi 2013; Mberu 2005).

Finally, past research in Nigeria has shown differential migration propensities across ethno-linguistic and religious communities. In general, Christians are more likely to migrate than Muslims, with members of the Hausa/Fulani communities in the north found to be *least* likely to migrate to urban areas (Mberu 2005). Data from the 2010 IMS are consistent with

these past findings, indicating that rural-urban migration is more common in the South West, South East and around the Abuja FCT than in the northern regions.

These findings challenge some current perceptions of migration patterns in the country. For example, a 2014 paper from the DFID-funded Migrating out of Poverty project makes the following statements:

Poverty levels are comparatively higher in northern regions of the country, which are thought to be the primary source areas for migration...Families in the northwest and the northeast are four times more likely to have no education than those in the south (McKay and Deshingkar 2014, 11-12).

This passage, which reflects the common misperceptions about drivers of rural-urban migration noted above, is based on assumptions rather than actual evidence. Given what we know about voluntary migrant selectivity in general and in Nigeria in particular, it is unlikely that poor, relatively uneducated individuals from the predominantly Hausa north of Nigeria will contribute disproportionately to rural-urban migration flows—unless communities face forced displacement. Indeed, while the authors may overstate the significance of household poverty as a direct stimulus for migration, conflict-induced forced migration has had a significant impact on migration in Northern Nigeria.

In the North East region conflict has resulted in large-scale population displacement: according to a recent International Organization for Migration report nearly 2 million people have been displaced, with 92% being hosted in low-income communities in the wider region. Borno state has been most severely affected, followed by Adamawa, Yobe and Gombe (IOM 2016). The scale of displacement is straining resources and services in these regions.



While much of this conflict in recent years has been associated with the Boko Haram insurgency, there is a potentially more significant and persistent problem of conflict over resources in the region that some have linked to environmental change (Obioha 2008). Indeed, there is evidence that changes in rainfall associated with climate change have accelerated urbanization in Africa (Barrios, Bertinelli and Strobl 2006) and there was a significant decline in rainfall in Nigeria in the second half of the 20<sup>th</sup> century, with northern areas most significantly affected (see Oguntunde, Abiodun and Lischeid 2011; Ogungbenro and Morakinyo 2014). Conflict and environmental change may therefore play an important role in driving migration for years to come.

In sum, given current trends there is a very high likelihood that Nigeria's urban population will continue to expand rapidly in coming years and constitute an increasing share of the national population. After a period of decline the rate of population increase has reached pre-1980 levels due to falling mortality and persistently high fertility, particularly in the North (see Figure 4). Population growth will naturally contribute to the expansion of Nigeria's urban population, and as noted above there are many positive and negative forces that will continue to stimulate rural-urban migration.

#### **Figure 4. Total Fertility Rates by State in 2013**

#### **4. Conclusion**

The claim that urbanization in Nigeria has stalled was based on flawed data and a problematic hypothesis. Potts (2012) relied on a draft of the Africapolis data that was incomplete; the final published figures clearly undermine the stalled urbanization hypothesis. This much is clear. But it is also important to recognize the fundamental flaws

in this hypothesis in the first place, because it reflects a long-standing misconception about urbanization as a process.

Potts (2012) argues that 'settlements should be defined as urban only if most of their residents derive the majority of their livelihoods from non-rural occupations' (1382). From this premise, population data are assumed to reflect economic trends, which the author claims are not in favour of rural-urban migration due to 'high levels of economic uncertainty' for people living in urban areas (1389).

This conceptualisation of urbanization as a strictly economic process is flawed. As decades of migration research has shown, including research in Nigeria, people migrate for many reasons; employment opportunities are but one such reason. Therefore we cannot make reliable inferences about economic conditions by examining inferred migration trends from questionable population data. Moreover, it isn't clear why we should continue to conceptualise urbanization as solely or primarily an economic process in sub-Saharan Africa. Such a perspective should be balanced with an appreciation of the demographic forces driving the process, as well as the demographic dimensions of the very concept of urbanism.

A growing body of evidence suggests that declining mortality in a context of persistently high fertility is a sufficient condition for urbanization to occur independent of structural economic change. Nigeria's experience appears to further confirm this evidence. Economic booms and busts surely influence migration patterns, but history suggests that urbanization will persist once mortality rates fall far enough, regardless of economic trends.

Potts (2012) also questions whether or not rural transformation 'is meaningful in terms of a structural understanding of urbanization' (1383). If one begins from the premise that

urbanization should be defined by principally by economic structure, then this statement is justified. But there are good reasons to adopt a spatial-demographic concept of urbanism: large, dense concentrations of people have distinct requirements that set them apart from rural settlements regardless of their employment profile, such as sewerage networks, large-scale water distribution and mass transport systems. As such a spatial-demographic definition of 'urban' is appropriate—at least for public policy purposes, which is presumably the purpose of tracking changes in human settlement patterns. Large human settlements that emerge in previously rural landscapes should certainly be classified as urban from this perspective.

In sum, in a context of high fertility, declining mortality, conflict and changes in rainfall patterns, it is very likely that Nigerian towns and cities will continue to grow and house an increasing share of the national population in the years ahead.

## References

- Angel, Shlomo. (2012). *Planet of Cities*. Lincoln Institute of Land Policy.
- Barrios, S., Bertinelli, L., & Strobl, E. (2006). Climatic change and rural–urban migration: The case of sub-Saharan Africa. *Journal of Urban Economics*, 60(3), pp. 357-371.
- Bloch, R., Fox, S., Monroy, J. & Ojo, A., (2015) *Urbanization and Urban Expansion in Nigeria*. Urbanisation Research Nigeria (URN) Research Report. London: ICF International.
- Byerlee, D. (1974). Rural-Urban Migration in Africa: Theory, Policy and Research implications. *International Migration Review*, Vol. 8 No. 4, pp. 543-566.
- Cohen, B. (2004). Urban Growth in Developing Countries: A Review of Current Trends and a Caution Regarding Existing Forecasts. *World Development*, 32(1), pp. 23-51.
- De Brauw, A., Mueller, V. and Lee, H.K. (2014). The Role of Rural-Urban Migration in the Structural Transformation of Sub-Saharan Africa. *World Development*, Vol 63, pp. 33-42.
- Eurostat (n.d.) Urban-rural typology, European Commission. Available online: [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Urban-rural\\_typology](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Urban-rural_typology)
- Fay, M. and Opal, C. (2000) Urbanization without growth: A not so uncommon phenomenon. *Policy Research Working Paper no. 2412*. Washington, DC: The World Bank.
- Fox, S. (2012) Urbanization as a Global Historical Process: Theory and Evidence from sub-Saharan Africa. *Population and Development Review*, Vol. 38 (2), pp. 285-310.
- Fox, S. (2014). The political economy of slums: Theory and evidence from Sub-Saharan Africa. *World Development*, Vol. 54, pp. 191-203.
- Fox, S. (2017) Mortality, migration and rural transformation in sub-Saharan Africa's urban transition. *Journal of Demographic Economics*, Vol. 83, No 1.
- Fox, S. and Bell, A. (2016) Urban Geography and Protest Mobilization in Africa. *Political Geography*, Vol. 53, pp. 54-64.
- Fox, S. and Goodfellow, T. (2016) *Cities and Development*, Second Edition, London: Routledge.

- Friedmann, J. and Miller, J., (1965) The Urban Field. *Journal of the American Institute of Planners* 31 (4), 312-320.
- IOM (2016) *Nigeria Emergency Operations Situation Report, March 2016*. International Organization for Migration. Available at: [www.nigeria.iom.int/](http://www.nigeria.iom.int/)
- Jedwab, R., Christiaensen, L. and Gindelsky, G. (2014) Rural Push, Urban Pull and...Urban Push? New Historical Evidence from Developing Countries. *Institute for International Economic Policy Working Paper Series 4*, Elliott School of International Affairs, The George Washington University.
- Lall, S.V., Selod, H., and Shalizi, Z. (2006) *Rural-urban migration in developing countries: A survey of theoretical predictions and empirical findings*, World Bank Policy Research Working Paper 3915. Washington, DC: The World Bank.
- Lewis, A. (1954) Economic development with unlimited supplies of labor. *The Manchester School*, 22: 139-191.
- Linard, C., Tatem, A.J. and Gilbert, M. (2013) Modelling spatial patterns of urban growth in Africa. *Applied Geography*, 44, pp. 23-32.
- Lucas, R.E.B. (1997) Internal Migration In Developing Countries. In Rosenzweig, M.R. and Stark, O. (Eds.) *Handbook of Population and Family Economics*, Oxford: Elsevier, Chapter 13, pp. 721-798.
- Mberu, B.U. (2005) Who Moves and Who Stays? Rural Out-Migration in Nigeria. *Journal of Population Research*, Vol. 22 No. 2, pp. 141-161.
- McKay, A. and Deshingkar, P. (2014) Internal Remittances and Poverty: Further Evidence from Africa and Asia. *Migrating out of Poverty Working Paper 12*, University of Sussex.
- McNicoll, G. (2011) Achievers and Laggards in Demographic Transition: A Comparison of Indonesia and Nigeria. *Population and Development Review*, Vol. 37 No. s1, pp. 191-214.
- Mendola, M. (2012) Rural out-migration and economic development at origin: What do we know? *Journal of International Development*, 24, pp. 102-122.

Moriconi-Ebrard, F., D. Harre and P. Heinrigs (2016) *Urbanization Dynamics in West Africa*

*1950–2010: Africapopolis I, 2015 Update*, West African Studies, OECD Publishing, Paris.

National Population Commission (2010) *Internal Migration Survey*.

Obioha, E.E. (2008). Climate change, population drift and violent conflict over land resources in northeastern Nigeria. *Journal of Human Ecology*, 23(4), pp. 311-324.

Ogungbenro, S. B., & Morakinyo, T. E. (2014). Rainfall distribution and change detection across climatic zones in Nigeria. *Weather and Climate Extremes*, 5, pp. 1-6.

Oguntunde, P. G., Abiodun, B. J., & Lischeid, G. (2011). Rainfall trends in Nigeria, 1901–2000. *Journal of Hydrology*, 411(3), pp. 207-218.

Oyeniyi, B.A. (2013) *Internal Migration in Nigeria: A positive contribution to human development*. ACP Observatory on Migration / International Organization for Migration.

Population Council (2007) Report of Nigeria's National Population Commission on the 2006 Census. *Population and Development Review*, 33 (1), pp. 206-210.

Potts, D. (2012). Challenging the myths of urban dynamics in sub-Saharan Africa: The evidence from Nigeria. *World Development*, 40(7), 1382-1393.

Robinson, R.S. (2012) Negotiating Development Prescriptions: The Case of Population Policy in Nigeria. *Population Research Policy Review*, 31 (2), pp. 267-296.

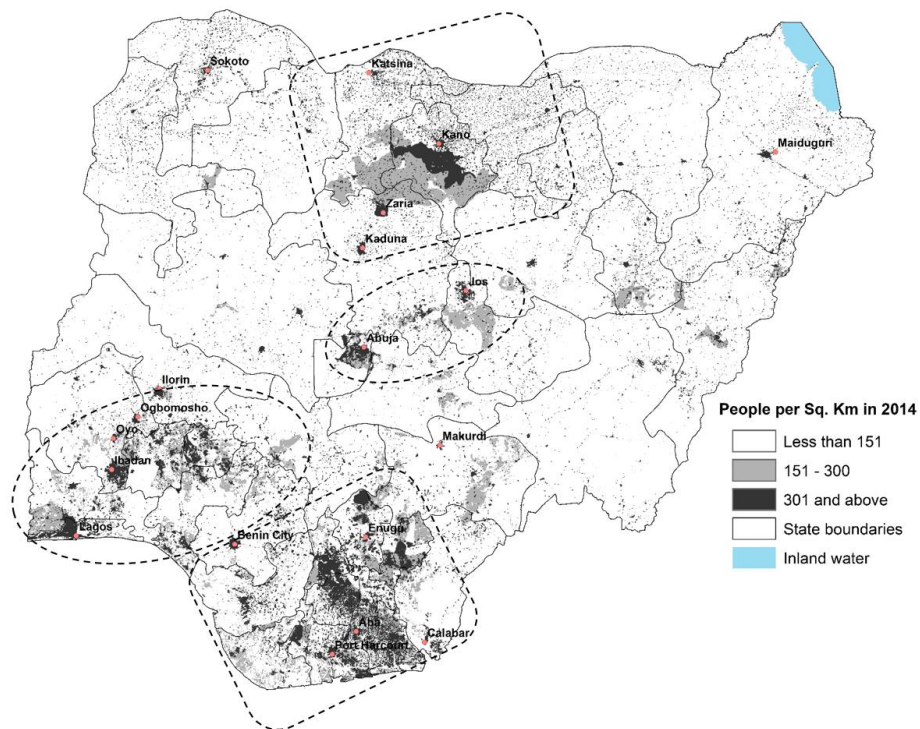
Rose, A. and Bright E. (2014) The Landscan Global Population Distribution Project: Current State of the Art and Prospective Innovation, *Population Association of America 2014 Annual General Meeting*. Available at: <http://paa2014.princeton.edu/abstracts/143242>

Satterthwaite, D. (2007) The transition to a predominantly urban world and its underpinnings. *Human Settlements Discussion Paper - Urban Change 4*. London: International Institute for Environment and Development.

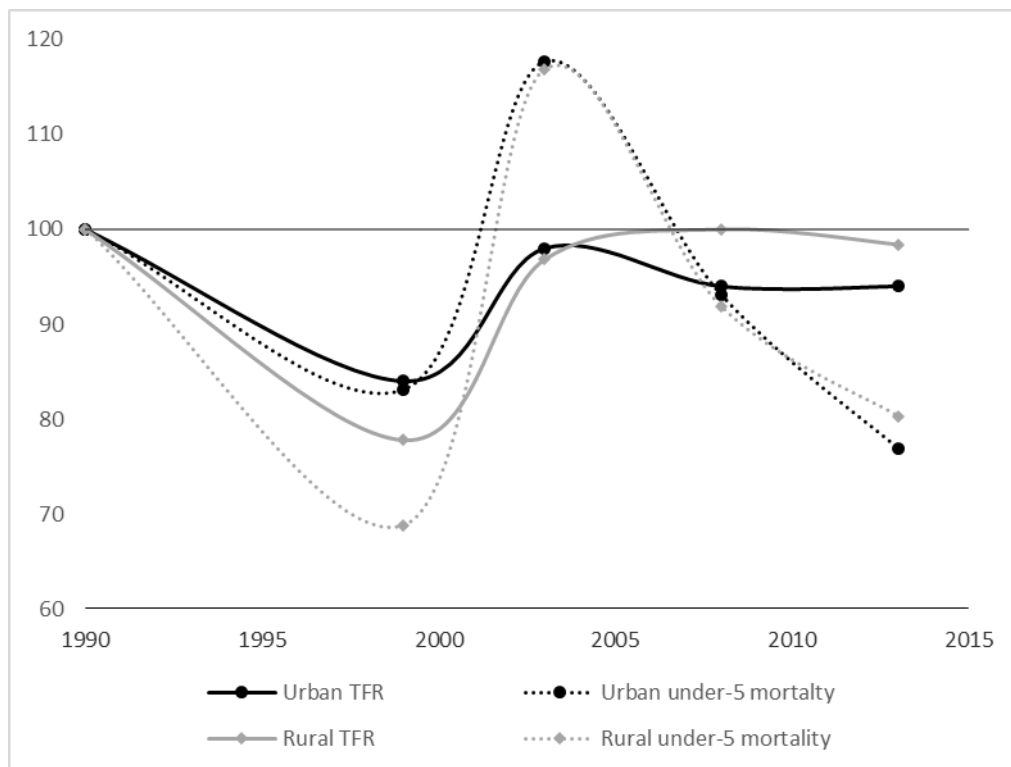
Seto, K.C., Güneralp, B. and Hutya, L.R. (2012) Global forecasts of urban expansion to 2030 and direct impacts on biodiversity and carbon pools. *Proceedings of the National Academy of Sciences*, Vol. 109 No. 40, pp. 16083-16088.

- Todaro, M. (1980) Internal Migration in Developing Countries: A Survey. In Easterlin, R.A. (Ed.) *Population and Economic Change in Developing Countries*, pp. 361 – 402.
- Uchida, H. (2010) Agglomeration Index: Towards a New Measure of Urban Concentration. In Beall, J., Guha-Khasnobis, B. and Kanbur, R. (Eds.) *Urbanization and Development: Multidisciplinary Perspectives*, Oxford: Oxford University Press, pp. 41-59.
- United Nations (2014) *World Urbanization Prospects: The 2014 Revision*, Department for Economic and Social Affairs. New York: United Nations.

**Figure 2. People per square kilometre in 2014 & emergent urban fields**

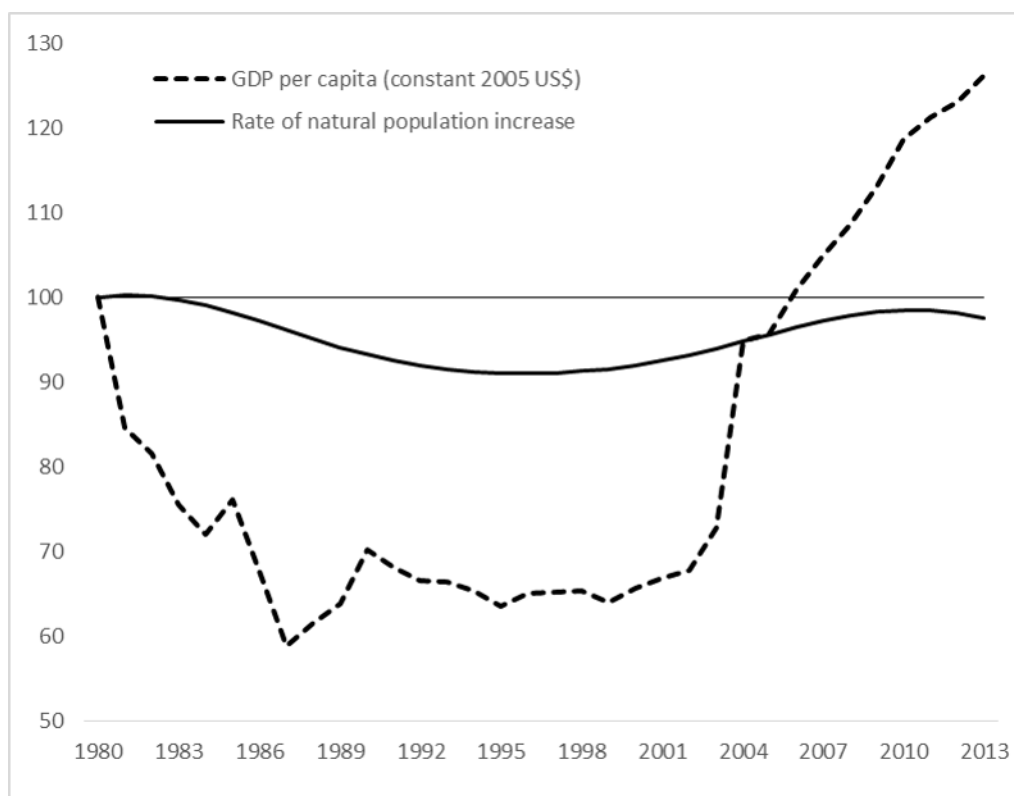


**Figure 2. Trends in fertility and mortality by urban and rural residence**





**Figure 3. GDP per capita and rate of natural population increase, 1980-2013**



**Figure 4. Total Fertility Rates by State in 2013**

